

Ministry of Public and Business Service Delivery



Government Services Integration Cluster
Digital Enterprise Engagement Practice (DEEP)

Engagement Platform

Conversational Interactive Voice Response (CIVR) MVP for MTO Driver and Vehicle Information

Monitoring and Reporting



Digital Enterprise Engagement Practice: "Connecting the people and businesses of Ontario with their Government"
Government Services Integration Cluster: "Enable the best experiences for citizens, business and employees"

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MVP Reviews and Reporting

Getting started our focus is - the system is working and not negatively impacting the public or agents. Light reporting to follow.

Calendar

- **Feb 2** – Triage reporting for systems – full team
- **Feb 3** - Triage reporting for systems – full team
- **Feb 6** – Reporting analysis story – content working team
 - we will have enough calls over 1000
 - we can do our analysis on this together
- **Feb 8** - Reporting analysis story - content working team
- **Feb 10** - Reporting analysis story - content working team
- **Feb 13th** forward
 - CMI calendar content meeting – include Kim and Kyle
 - Weekly full team organized by DEEP
 - Document the issues/defects in the list

Who to report to

- Working team
- Owner/Support – Beth
- Directors – Olga, Lisa
- ADM's/Associate and CIO/CCIO
- Communications will share with DMO
- SWAT
- Measurement – Sharon Stuckless, Rene Alvarez plus teams

MVP QuickSight Reports and Understanding

How we start - will be a learning experience for how we go forward.

What we expect to see

- CIVR calls – 500 to 1000 a day
- Calls directed to agents? ~33% redirects a day (of the 15% to start)
- Current IVR does not offer agent in a few flows – this is a change
- How callers many had multiple questions?
 - Note trends for planning
- What are they calling about - trend
- Missed utterances may be higher initially
- Internal users – trying it out

What actions are we taking

- Track items in **Lists** – Defect List
- Keywords may be added – threshold TBD
- Redirects – *it sounds like you want information on* – call or look at
- Broadcast message updates or if needed
- What can we do for future - backlog
- Do we need to translate this differently
- Checklists example
 - Daily to make sure it is working providing the service expected – random checks
 - Monthly the links provided are working
 - Yearly translation review & flows

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Reports and Surveys

Once we see the usage, behaviours, and caller stories - we may want to develop reports for different audiences.

Ideas for Possible BI Reports

- Top 10 missed utterance daily to spot trends
- Peak time of day trends with averages etc.
- After hours trends
- Chart of total calls and then transfers to CIVR and agents
- Answered, busy, failed or no answer trends or weekly or by QID
- Time in queue to an agent, transfer time
- Insights on Voice of the Customer

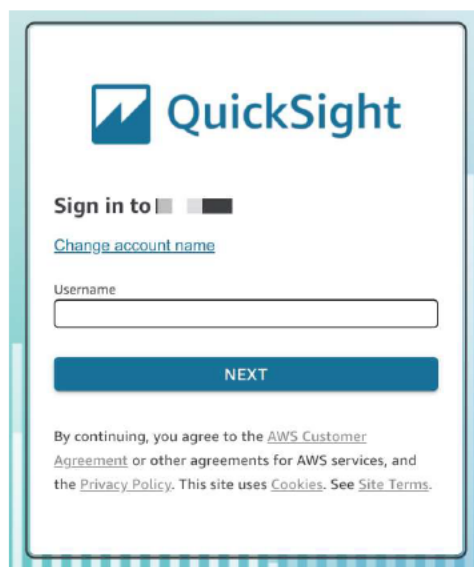
Surveys for callers

- Repeat the Pre-CIVR survey once it is fully deployed
- Have callers listened to the CIVR message and got the answer they were looking for?
- Do they know more before they call now?

Accessing QuickSight Reports

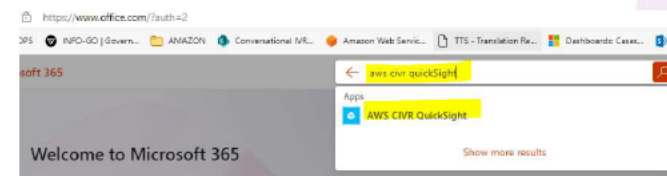
Two Step Process

1. Setup Account
2. Access to view reports/dashboards will be shared

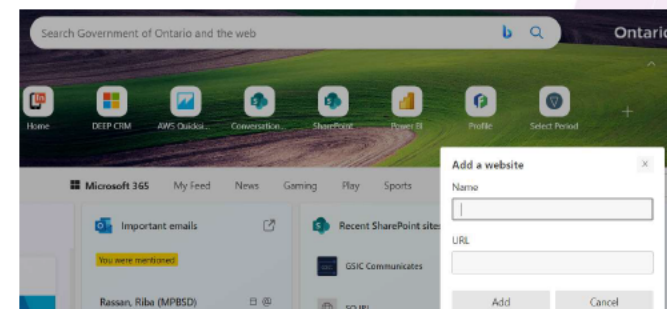


Quick Access

Find the APP



Add to 365 Page

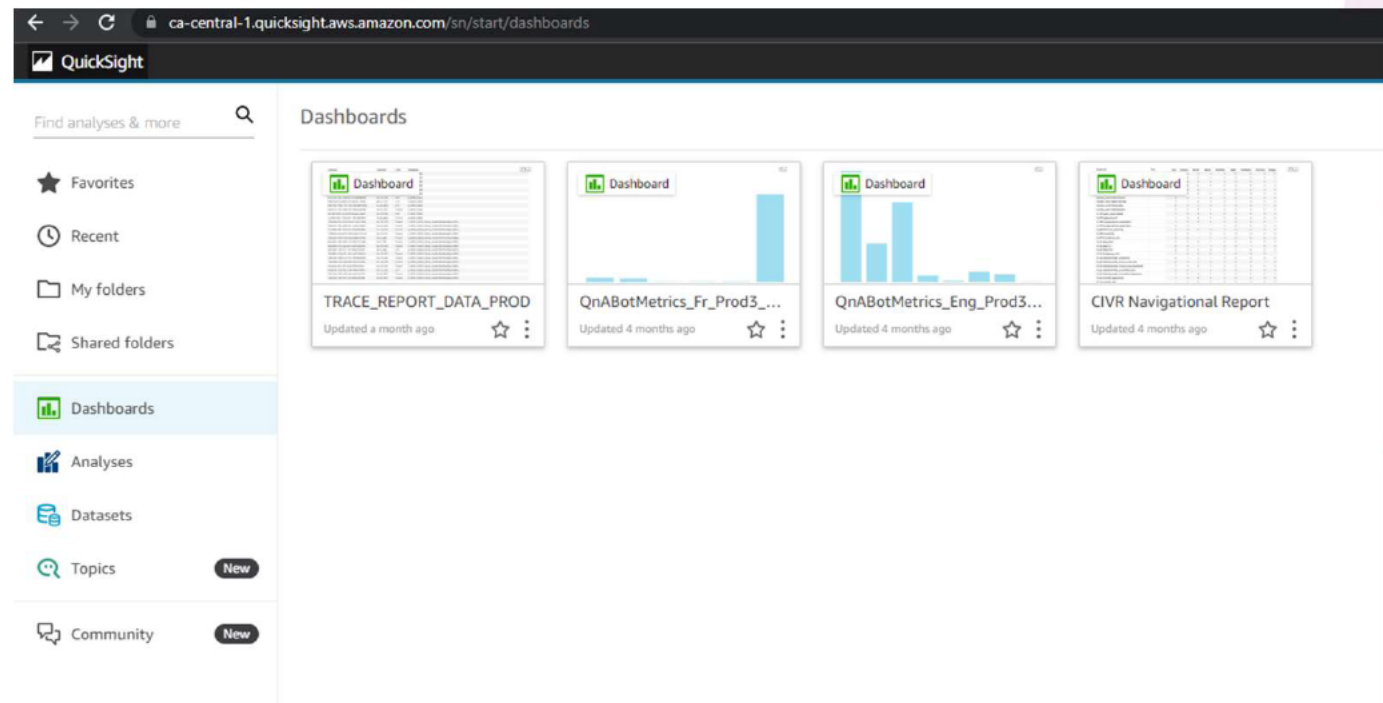


CIVR Analytics & Reporting: Amazon QuickSight

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MVP dashboard offers reporting data that can be targeted to specific date ranges.

- **Amazon QuickSight** delivers easy to understand insights through interactive dashboards allowing for analysis of data.
- **Reporting data** is essential for improving CIVR performance, which includes learning more about callers and resolving technical issues.
- **QuickSight reports** will assist ServiceOntario and MTO with iterative improvements to the D&V CIVR needed for long term success.



Amazon QuickSight: Types of Reporting

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1. QnA Bot Metrics

- **What:** Provides data related to what the CIVR understand the callers are asking, what answers are being provided, what words the CIVR is not picking up, and the topics count for select period.
- **Who:** SO CCMI & CMI & MTO Policy/Program Areas
- **Example:** Leverage this report to **compare** what were the **most frequently asked questions that are answered or missed utterances that are not**. This can provide insight into what specific information customers are looking for from one month to another. **ACTION:** update webpages, and for continuous improvement.

2. Trace

- **What:** CIVR collects what it believes the callers' actions are while using the CIVR which provides understanding into caller behavior. Understanding how easy or difficult the are callers able to navigate the CIVR - if there are many timeouts or max invalids that could indicate the CIVR does not understand what the caller is asking, and they are having difficulty.
- **Who:** SO CCMI & CMI
- **Example:** Review the Trace report to see where callers are repeatedly asking CIVR to “repeat” the answers which could be an indication that the information presented is not clear or too much information is provided. **ACTION:** the specific script(s) should be reviewed and modified.

3. CIVR Navigation

- **What:** Navigational report which provides a **summary of how callers moved through the CIVR** - total times a questionID was referenced, hang-ups, timeouts, repeats, requests for agents, etc. for each Question ID.
- **Who:** SO CCMI/CMI & MTO
- **Example:** ServiceOntario Locations QID was referenced 22 times which had 1 timeouts, 9 repeats and 2 hang-ups. This could indicate that the caller was satisfied with the information provided even though there were 9 repeats as the callers want to ensure they retain the correct information. Additional with no invalids, timeouts or max repeats/errors this could also indicates callers are receiving the information they required and had no further questions. **ACTION:** – use this report to see which QIDs are triggering the most requests for agent transfers and update those QIDs to provide more information.

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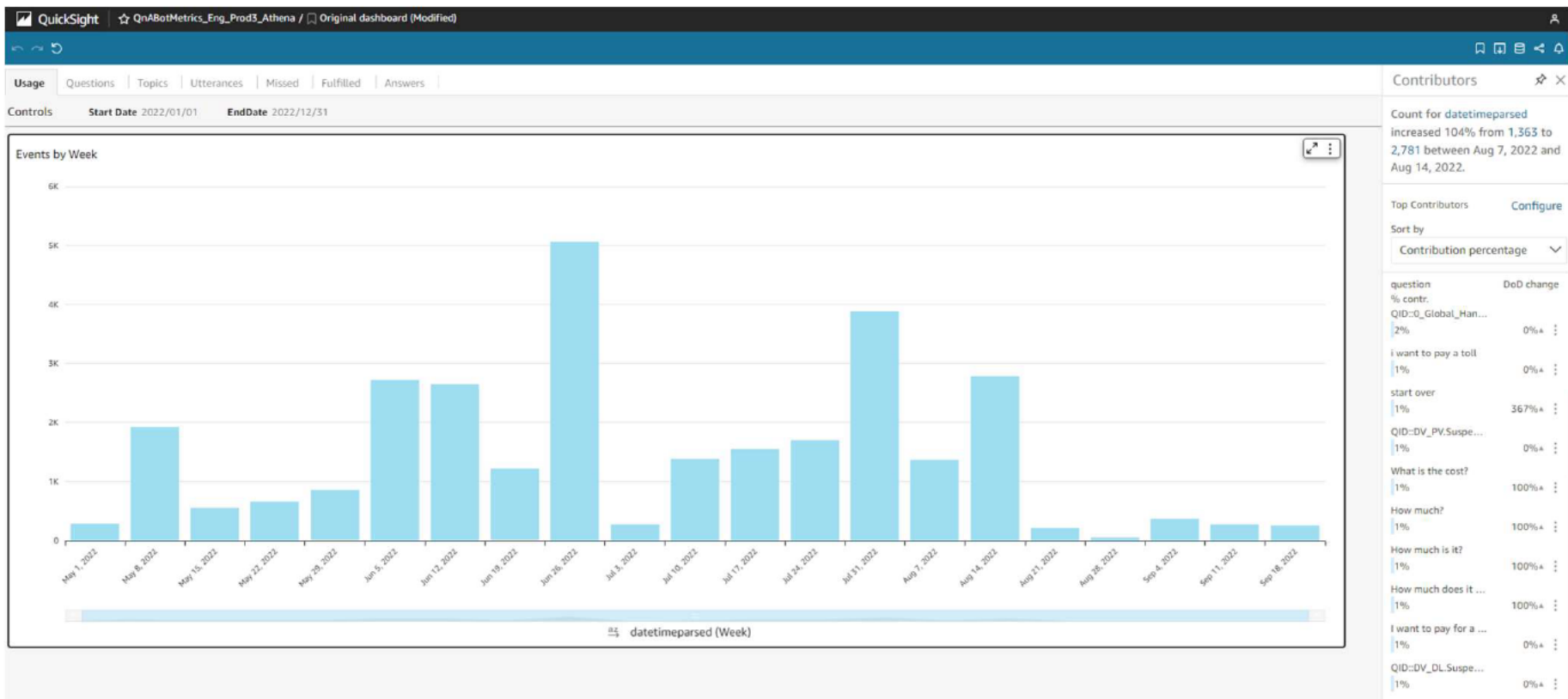
View of Metrics, Monitoring & KPIs

Digital Enterprise Engagement Practice: "Connecting the people and businesses of Ontario with their Government"
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1. QnA Bot Metrics

View a dashboard for a time period selected.

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1. System Monitoring – Questions Answered and Fulfilled

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Learn about what people are asking most – Voice of the Customer.

Reporting – Starting with similar reports, and word cloud for focus.

- **Identify the most popular questions** that the CIVR believes callers are asking within a certain time period
- This example indicates callers may have been inquiring about transferring ownership
- **Agent utterance** was requested and fulfilled 42 within the time period
- “I want to pay a driver fine” was the second most popular fulfilled utterance indicating most callers are asking about this specific topic or QID

Usage

Questions

Topics

Utterances

Missed

Fulfilled

Answers

Controls

Start Date

2022/09/01

End Date

2022/12/31

Questions Count

qid	Count
0_Global_Handler.CustomNoMatches	396
DV_PVTransfer_Death	257
DV_PVTransfer_FamilyTransfer	240
0_Global_Handler.Agent	205
0_Global_Handler.MainMenu	185
DV_DL.SuspensionsFines_HowDoYouWantT...	172
DV_PVTransfer_FamilyGiftTax	140
DV_PVPermit_Replace_OwnershipInfo	135
DV_PVPlates_Renew_Info	121
DV_APP.Replace_LastDamagedStolen	115
DV_DL.SuspensionsFines_PayMyFines	111
DV_DL.DriveTest_ModExamReport	109

Usage | Questions | Topics | Utterances | Missed | **Fulfilled** | Answers

Controls

Start Date2022/11/01End Date2022/12/30

Fulfilled Utterances Count

utterance	Count %
qid0globalhandleragent	42
i want to pay a driver fine	25
email	23
strawberry	16
driver fine	15
goodbye	13
qid0globalhandlergoodbyeyes	13
banana	12

Usage

- Start Date & End Date
- Shows total number of QIDs referenced

Questions – Question Count

- Shows number of callers hitting the specific QID including main menu, agent and no matches
- Benefit: we can see what the CIVR thinks the callers are asking about
- Can sort the most important/popular QIDs

Answer – Answer Cloud

- Answer scripts played for questions asked
- Provides a count of the most popular answers the CIVR is providing

Fulfilled – Fulfilled Utterances Count

- Utterances that the CIVR was about to fulfill based upon the request it understood and provided the response

Topics – Topics Count

- Can sort most important/popular topics the callers are calling about
- Each topic can have many specific QIDs associated with it

1. System Monitoring – Missed Utterances and Word Cloud (GSiC)

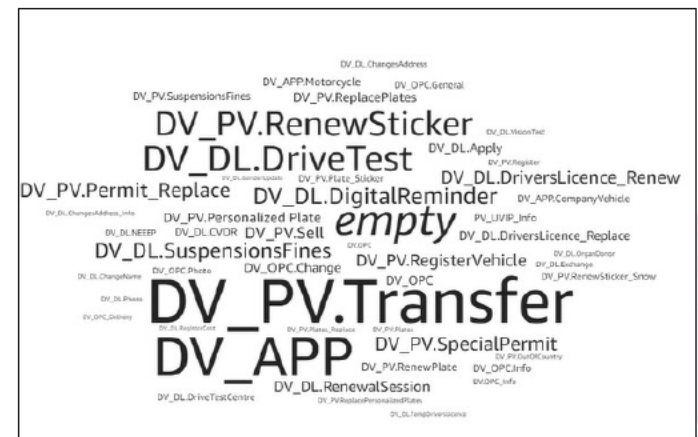
Learn about the what people are asking – Voice of the Customer.

Reporting

- Missed utterances can be used to see what CIVR was not able to fulfill and provide an answer for
- They can also be used to indicate what new questions can be added to the QnABots for the CIVR to recognize

utterance	Count
a	165
a bird	1
a one i need to pay	1
a room	1
a time limit to submit my application to apply...	1
a well i need to apply for under you for twent...	1
aapc card	1
alana	1
allergies russian	1
am i eligible for an a p p	1
Total	1,194

utterance	Count
a	3
car prices to mention	1
feedback	1
gibberish	1
i have got my face	1
i just myntr for the card	1
i know i hope it by this	1
jibrish	1
no	2
oh i need information on pocket permit for m...	1
oh okay ummm	1
oh party but its for existing biletty needs	1
Total	38



Over time the data will be enriched

- Contact handling quantitative statistics will include speech analytics capabilities (for clients that use the EP-cloud instance)

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2. Trace Report

We can trace what people are doing and the time spent in the CIVR.

Reporting Main Use

- Which QIDs were presented to the caller
- Potential time spent, invalids, calls going to agents, etc.
- The number of requests for an agent - could indicate a change required to that QID

Trace Reporting

- This is a **view** is available for a requested time period
- Each **conversation** is assigned a **code**
- **Time stamp** shows when the calls came in (UTC)
- **The conversation** is outlined by the **naming conventions** for each item
- **Time is noted** in number of **seconds** for each named convention

QuickSight QnaBot Prod Trace Report / Original dashboard (Modified)

Controls Start Date: 2022/06/01 End Date: 2022/08/31

Contactid, Datetime, Civrid, and Allrequests

	Civrid	AllRequests
2:39pm	1797	O_BEGIN() [0s] O_Global_Handler.MainMenu(Agent) [49s]
2:34pm	1796	O_BEGIN() [0s] DV_DL.DriveTest_PermanentResidentDocuments() [50s] DV_DL.DriveTest_PermanentResidentDocuments(Repeat) [24s] O_Global_SmallTalk.AreYouThere() [14s] DV_DL.DriveTest
2:04pm	1794	O_BEGIN() [0s] O_Global_Handler.MainMenu(Repeat) [45s] DV_DL.DriveTest_DriversLicenceDocuments() [39s] DV_DL.DriveTest_DriversLicenceDocuments(Invalid) [10s] DV_DL.DriveTest_Canadi
2:00pm	1793	O_BEGIN() [0s] O_Global_Handler.MainMenu(Agent) [54s]
1:23pm	1792	O_BEGIN() [0s] DV_DL.SuspensionsFines_Info() [41s] DV_DL.SuspensionsFines_Info(Invalid) [53s] DV_DL.SuspensionsFines_DontKnow_Suspension_DL_NoticeOffFine() [10s] DV_PV.RenewSticker
5:11pm	1791	O_BEGIN() [0s] DV_DL.DriveTest_CanadianCitizenDocuments() [51s] DV_DL.DriveTest_CanadianCitizenDocuments() [19s] DV_DL.DriveTest_DriversLicenceDocuments() [32s] DV_DL.DriveTest_Dri
3:38pm	1790	O_BEGIN() [0s] DV_DL.SuspensionsFines_HowtoPayInPerson() [40s] DV_DL.RenewalSession_Cost() [18s] DV_DL.Apply_G1() [8s] DV_DL.Apply_G1() [8s] DV_DL.SuspensionsFines_HowtoPayInPer
3:36pm	1789	O_BEGIN() [0s] O_Global_Handler.MainMenu(Agent) [39s]
3:31pm	1788	O_BEGIN() [0s] DV_DL.SuspensionsFines_HowtoPayInPerson() [44s]
3:18pm	1787	O_BEGIN() [0s] O_Global_Handler.MainMenu(Agent) [39s]
3:16pm	1786	O_BEGIN() [0s] O_Global_Handler.MainMenu(Agent) [48s]
3:07pm	1785	O_BEGIN() [0s]
3:02pm	1784	O_BEGIN() [0s]
3:57pm	1783	O_BEGIN() [0s]

View: 500 items 1 of 2



2. Trace Report more

“Showing and telling” trace report value by example.

Example: Hang-up

- **Caller reached CIVR** (English) and then hung-up

ContactId	DateTime	CivId	AllRequests
a6266c01-1bb0-4594-956f-65ca631981ca	Nov 21, 2022	Timeout	O_BEGIN_E()[0s] O_Global_Handler.MainMenu(Invalid)[43s]
b08fc9e7-01b2-49d1-a2f3-40b1fc13cd46	Nov 21, 2022	2290	O_BEGIN_E()[0s]

Example: Successful Call

- Caller asked about suspension or fines and heard the answer script/information and hung-up
- Caller did not ask for an agent, repeat or any other questions

e41131d1-cf23-4e83-9f21-f18726669aeb	Nov 21, 2022	2289	O_BEGIN_E()[0s] DV_DL.SuspensionsFines_Info()[40s]
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Example: Request for Agent

- **Caller reached CIVR** (English) and then hung-up

f16d07d0-8106-4b52-bd67-fabb764ffd7e	Nov 21, 2022	2291	O_BEGIN_E()[0s] O_Global_Handler.MainMenu(Agent)[48s]
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Example: Did not get required information

- Caller connects with CIVR (French), gets DriveTest_Appointment information three times and last attempt timeouts (did not say anything after the answer script was provided)

5009bdb1-dacc-4075-ac27-5b5f504224c0	Nov 22, 2022	Timeout	O_BEGIN_F()[0s] DV_DL.DriveTest_Appointment_F()[38s] DV_DL.DriveTest_Appointment_F(Invalid)[22s] DV_DL.DriveTest_Appointment_F(Timeout)[16s]
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Definitions

- **Contact ID:** The unique identifier created from Amazon Connect
- **CivId:** The custom ID created from Amazon Connect which is created every time a call goes from on-prem SO D&V IVR to CIVR in Amazon
- **Timeout:** If a call is made directly to CIVR it shows timeout, but if a call is made to On-prem solution first then it provides the CIVRID
- **O_BEGIN:** The start of all calls made into CIVR
- **Global Handler.MainMenu:** Caller utters invalid word/phrase, start over, I want to start over

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3. CIVR Navigational Report

We can review a summary of how callers navigated the CIVR.

Reporting Main Use

- Provides total number of callers and average time spent in the CIVR (displayed in seconds)
- Summary of calls made, total times a questionID (QID) was referenced and specific information on each QID (hang-ups, timeouts, repeats, requests for agents, etc.)
- If we want to reduce calls being transferred to agent – use this report to see which QIDs are triggering the most requests for agent transfers
- **This is a view** is pulled for a requested time period
- **Total number of calls** - 12 calls made it to the “Apply_Cost_Info QID”
- **The breakdown** of 12 calls:
 - 1 timeout
 - 1 invalid
 - 5 repeats
 - 1 agent request
- **Multiple occurrences** within a single call causes the total and breakdown to not equal

Total Number of callers

332

Number of English callers

167

Number of French callers

165

Average time spent in CIVR (Sec)

59.23

Summary

QuestionID	Date	Total	Timeouts	Invalids	Repeats	MainMenu	Agent	MaxRepeats	MaxErrors	Hangup
☐ DV.Locations_Info	Nov 7, 2022	1	0	0	0	0	0	0	0	0
☐ DV_APP.Apply_AuthorizedRep		1	0	0	0	0	0	0	0	0
☐ DV_APP.Apply_AuthorizedRepUnableToSignForm_F		1	0	0	0	0	0	0	0	0
☐ DV_APP.Apply_Certify_F		2	1	0	0	0	0	0	0	0
☐ DV_APP.Apply_Cost_Info_F		12	1	1	5	0	1	0	0	0
☐ DV_APP.Apply_Eligible_F		2	0	1	0	0	0	0	0	0
☐ DV_APP.Apply_Info		3	0	1	0	0	0	0	0	0
☐ DV_APP.Apply_Info_F		1	0	0	0	0	0	0	0	0
☐ DV_APP.Apply_InterimInfo		2	0	1	0	0	0	0	0	0
☐ DV_APP.Apply Permanent		4	1	0	1	0	0	0	0	0

Note: Columns are similar to the current IVR navigation reports

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3. CIVR Navigational Report – Hang-up Calls

Each a topic/queue is identified under question ID – Data helps to understand the story.

Queue ID Reporting example

- **Hang-up calls** – should we be concerned?
- **2 calls and 2 hang-ups** for QID APP address change
- **No request to** speak to an agent, repeat or error out
- **The story** we can tell here is that likely this indicates the callers are receiving the information they were seeking and hung-up
- No concern or action needed

Start Date

2022/11/01

End Date

2022/11/30

Total Number of callers

332

Number of English callers

167

Number of French callers

165

Average time spent in CIVR (Sec)

59.23

Summary

QuestionID	Date	Total	Timeouts	Invalids	Repeats	MainMenu	Agent	MaxRepeats	MaxErrors	Hangup
☐ DV_APP.Apply_InterimInfo		2	0	1	0	0	0	0	0	0
☐ DV_APP.Apply_Permanent		4	1	0	1	0	0	0	0	0
☐ DV_APP.Apply_SubjectToChangePermit_F		2	0	0	0	0	0	0	0	1
☐ DV_APP.Change_Address		10	1	2	2	0	1	0	0	1
☐ DV_APP.Change_Address_F		2	0	0	0	0	0	0	0	2
☐ DV_APP.CompanyVehicle_ApplyOnline_F		6	1	0	0	2	1	0	0	0
☐ DV_APP.Deceased_PermitHolder_F		8	4	0	0	0	0	0	1	2
☐ DV_APP.General_Valid		3	1	1	0	0	0	0	0	1
☐ DV_APP.General_Valid_F		11	1	3	0	0	0	0	0	3
☐ DV_APP.Misuse_F		1	0	0	0	0	0	0	0	0

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3. CIVR Navigational Report – Max Error

Question ID data – needs to be understood in the context volumes for action.

Queue ID Reporting example

- **Max Error** – should we be concerned?
- **QID was requested 17 times** - the CIVR believes this for the QID for APP Address Change
- **1 MaxError** – is noted which means a **caller** uttered something that the **CIVR could not understand 3 times** for QID
- **The story** we can tell here is that 1 in 17 callers was not understood by the CIVR and they were taken to the agent queue.
- **This is not the primary desired experience**, however being directed to the agent ensures an answer
- **No concern**
- **Missed utterances** can be checked – though some volume may be required for trends

QuestionID	Date	Total	Timeouts	Invalids	Repeats	MainMenu	Agent %	MaxRepeats	MaxErrors	Hangup
DV_PV.OutOfCountry_Register_F		8	3	0	2	2	0	0	0	0
DV_PV.Personalized Plate_Cost_F		9	2	2	1	0	0	0	0	2
DV_PV.Personalized Plate_Graphics_F		13	3	1	3	0	1	0	0	2
DV_PV.Personalized Plate_Purchase_F		6	2	1	0	0	0	0	0	2
DV_PV.Plates_Replace_LostDamagedStolenCost_F		15	3	0	3	3	0	0	1	3
DV_PV.RegisterVehicle_SalesTax_F		4	2	0	0	1	0	0	0	0
DV_PV.RegisterVehicle_fromOOP_Howto_F		8	1	2	1	1	0	0	1	0
DV_PV.Register_Value_F		6	1	2	1	0	0	0	1	0
DV_PV.RenewSticker_InsuranceVerified_F		14	5	0	0	3	1	0	0	2
DV_PV.ReplaceLostStolenDamagePlate_F		22	2	7	1	0	4	0	0	0
DV_PV.ReplacePersonalizedPlates_HowTo_F		54	8	7	2	17	4	0	1	4
DV_PV.ReplacePlates_AcceptableID_F		15	3	1	1	4	1	0	0	1
DV_PV.ReplacePlates_Blue_F		13	1	1	2	0	0	0	0	7

KPI Measures

Success is about more than delivering a project on time and on budget – it is about meeting our callers need for service, both to self-serve and to reach an agent.

Measure	Description	Baseline	Target
Customer satisfaction (overall)	Baseline survey - caller is asked if they are willing to participate in a survey - if they agree they are able to confirm their phone number - The system places an outbound call to the caller to conduct the survey CIVR – Relaunch Survey - Callback to callers after the call (80% Standard) - approvals required - CIVR survey tool to connect to be developed	72.40%	80%
Speed to need (Time to first topic)	Baseline - time for callers to reach first topic in IVR CIVR - time for callers to reach first topic compare against baseline to measure improvement. (-10%)	112 sec	100.8 sec
Speed to need (Time to MMR)	Baseline - time for callers to reach MMR in IVR by pressing 0 CIVR - time for callers to reach MMR compare against baseline to measure improvement (-10%)	42 sec	37.8 sec
% Self serve (% hang ups)	Baseline - measured in IVR (hang-up /total callers) Any "hang-up" in a topic will be considered a self-serve CIVR . Aspirational it would increase, but success is maintaining (-10%)	37%	33.3 %
Request Agent (% top menu)	Baseline - number of callers that press 0 from top menu/total calls CIVR - number of callers that ask to speak to an agent immediately (-10%)	10%	9%

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QUESTIONS



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Amazon QuickSight & EP iceReports

The caller experience and insights from reports.

AWS CIVR Reporting

- **Callers experience** with the CIVR Solution before agent transfer
- **Insights for business:**
 - Caller trends, popular requests and caller preferences
- **Insights for operations:**
 - Identify potential problems that could impact customer experience
 - Review performance metrics

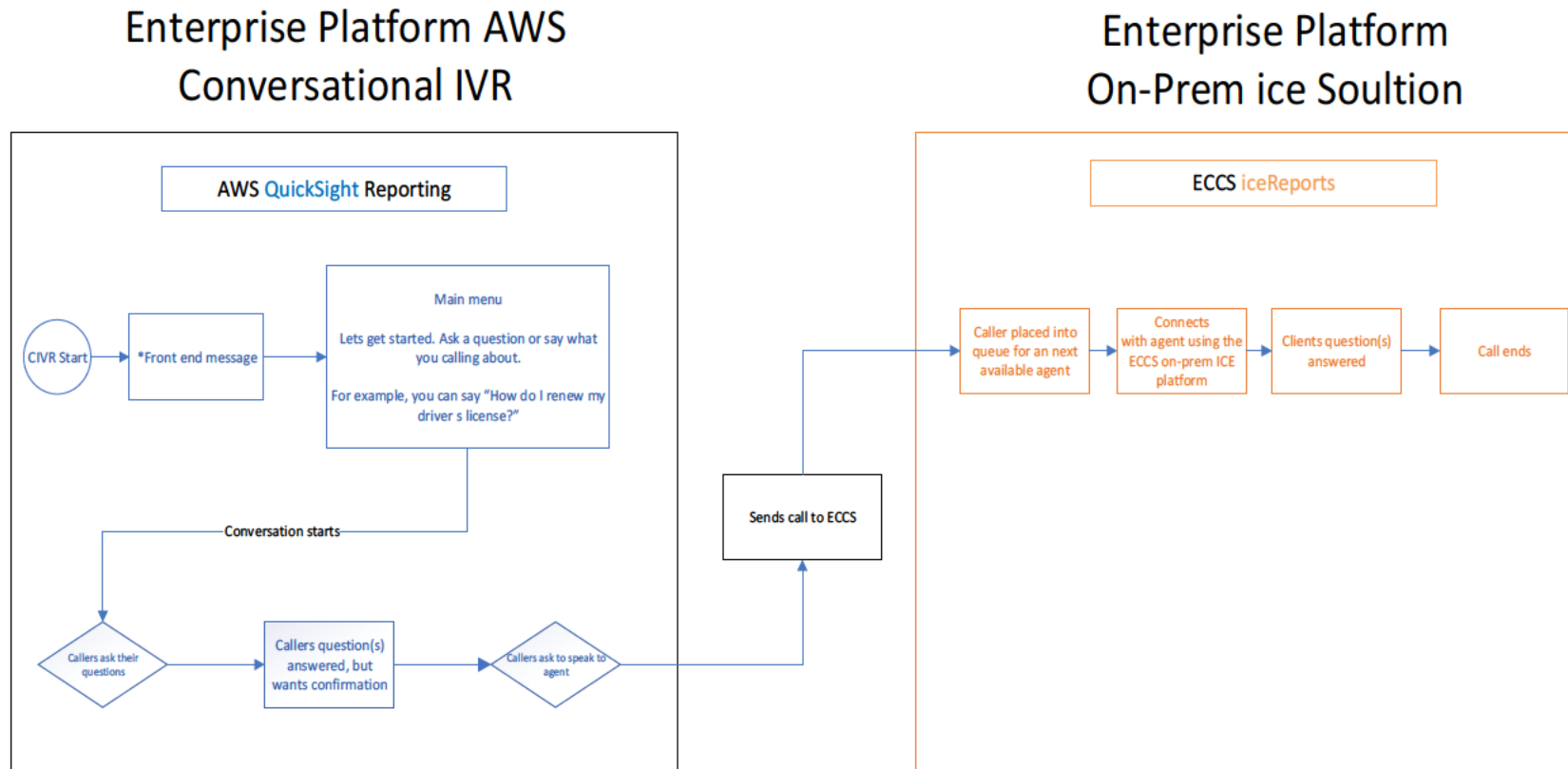
Enterprise Platform On-Prem iceReports

- **Callers experience** after being transferred to an agent - survey
- **Insights on users/agents experience:**
 - Number of calls handled by agents, calls transferred, etc.
- **Insights on queue activity:**
 - Number of calls that were in queue (avg. wait times, abandon time, on call, etc.) – need volume for impact.

Amazon QuickSight & ECCS iceReports Flow

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The caller experience and flow for reports.



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Defect List

100% of the time we are tracking issues and defects to understand and plan.

Transparent Tracking

- Daily planner was used for chatbot – we have decided to try a new route
- This will include actual defects and who it is assigned to
- The features can grow based on need - agile

